This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

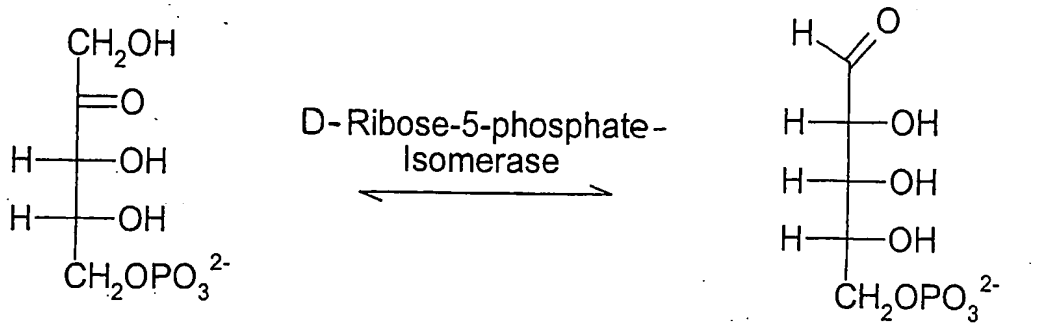
Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

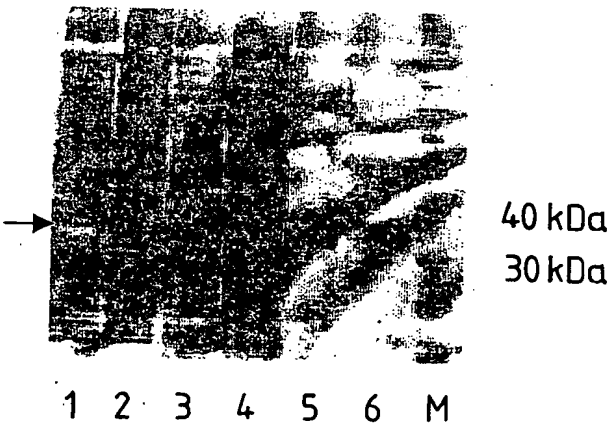
Fig. 1



D-Ribulose-5-phosphate

D-Ribose-5-phosphate

Fig. 2



CS-7861/LeA 34,055
Peter Schreier et al

Fig. 3

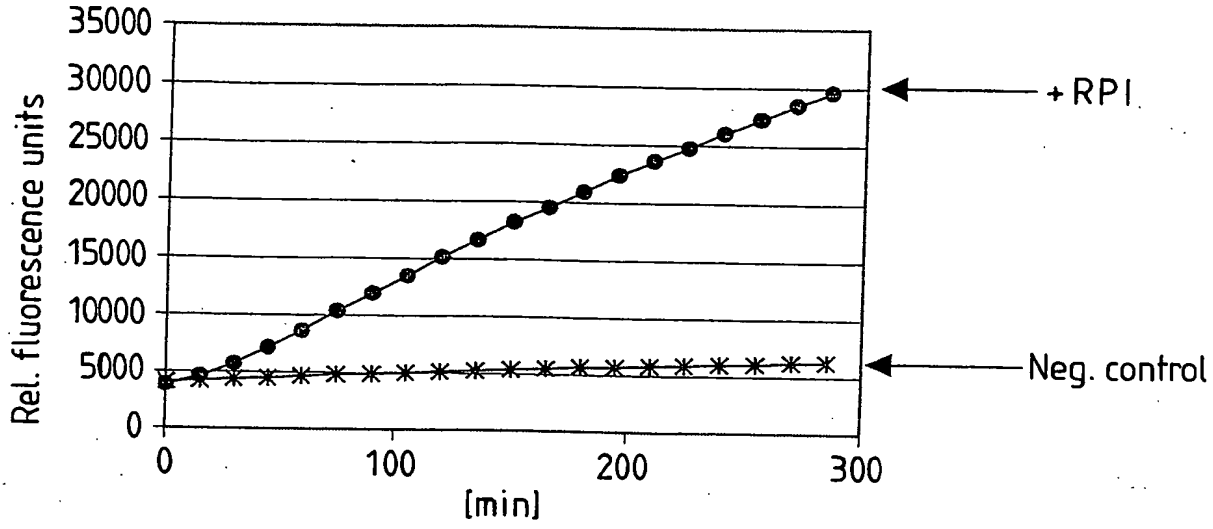
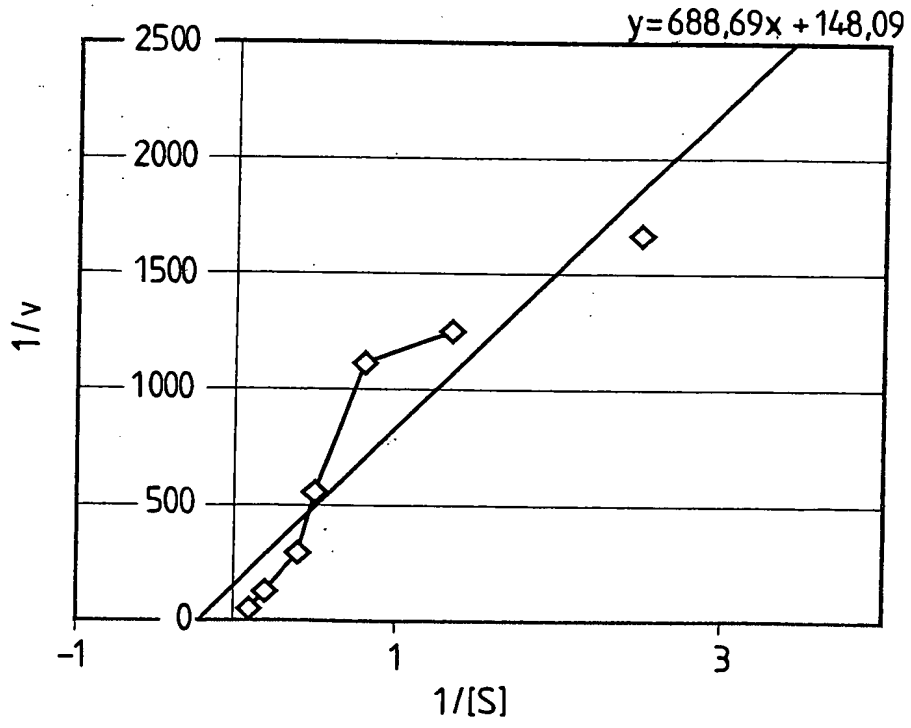


Fig. 4



CS-7861/LeA 36,055
Peter Schreier et al

Fig. 5

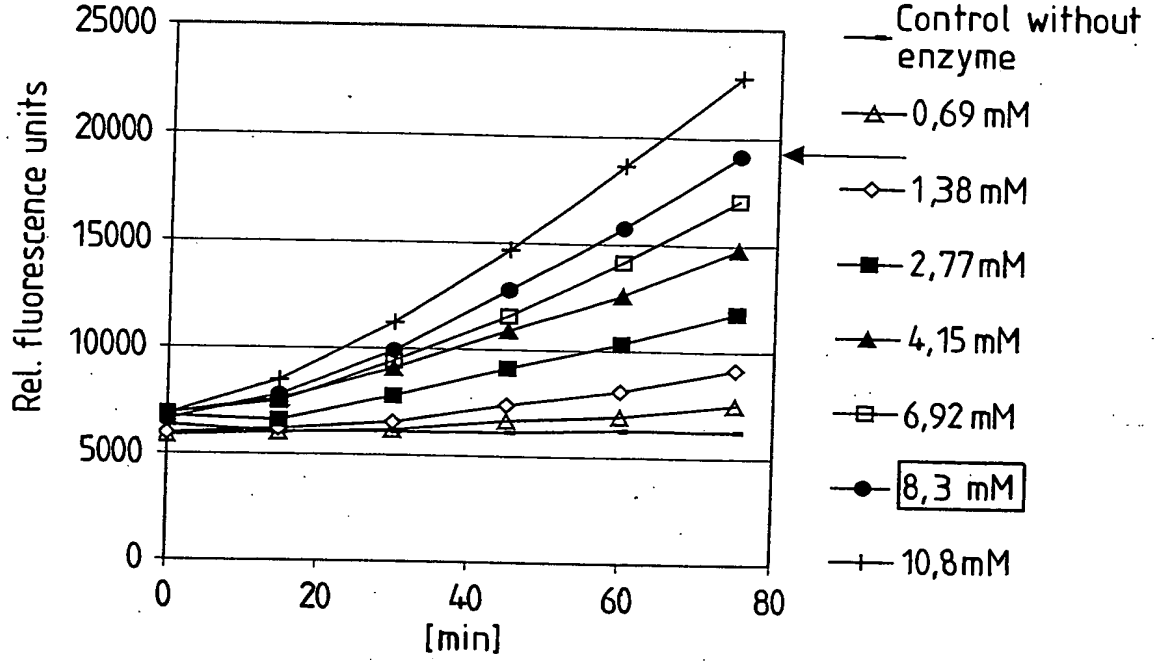
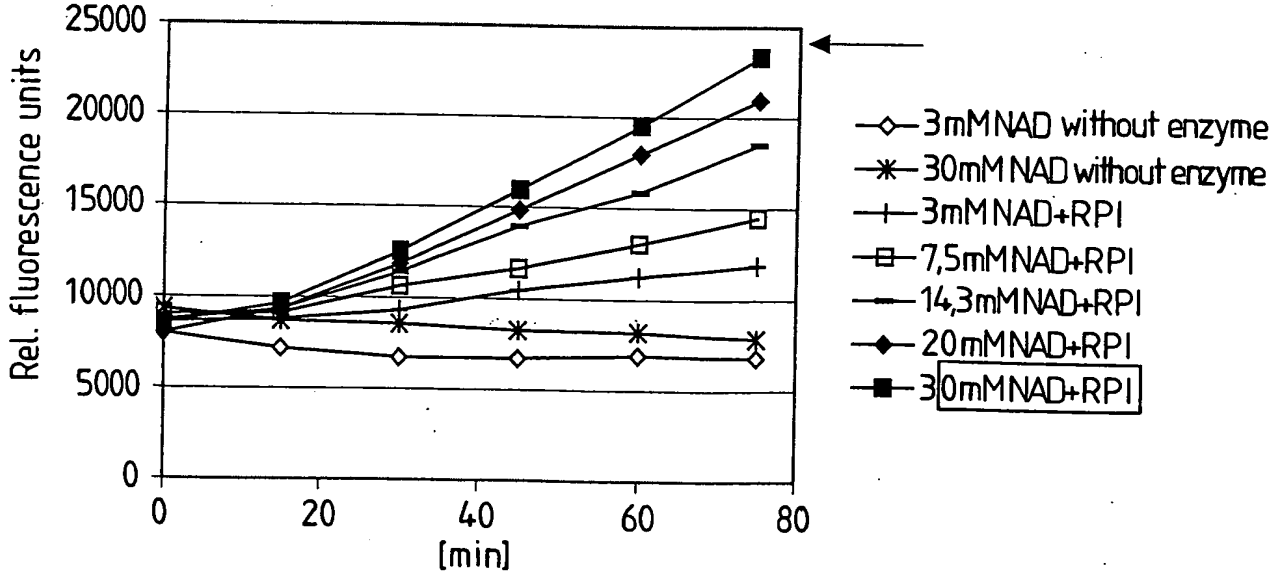


Fig. 6



CS7861/LeA 36,055
Peter Schreier et al

Fig. 7

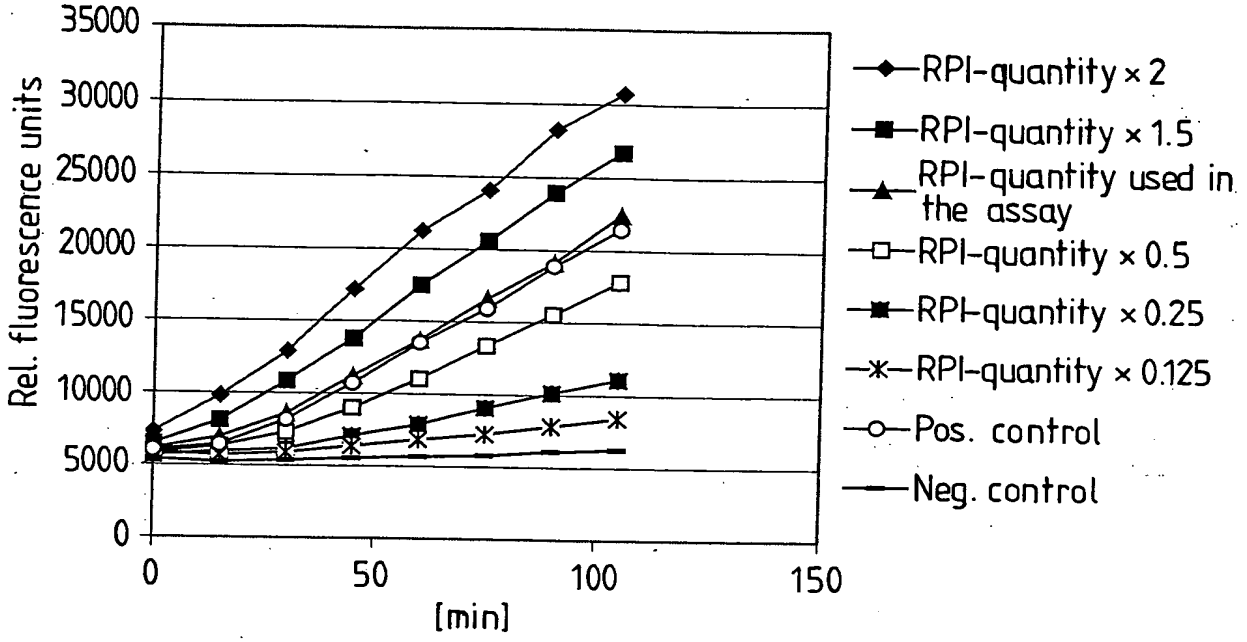
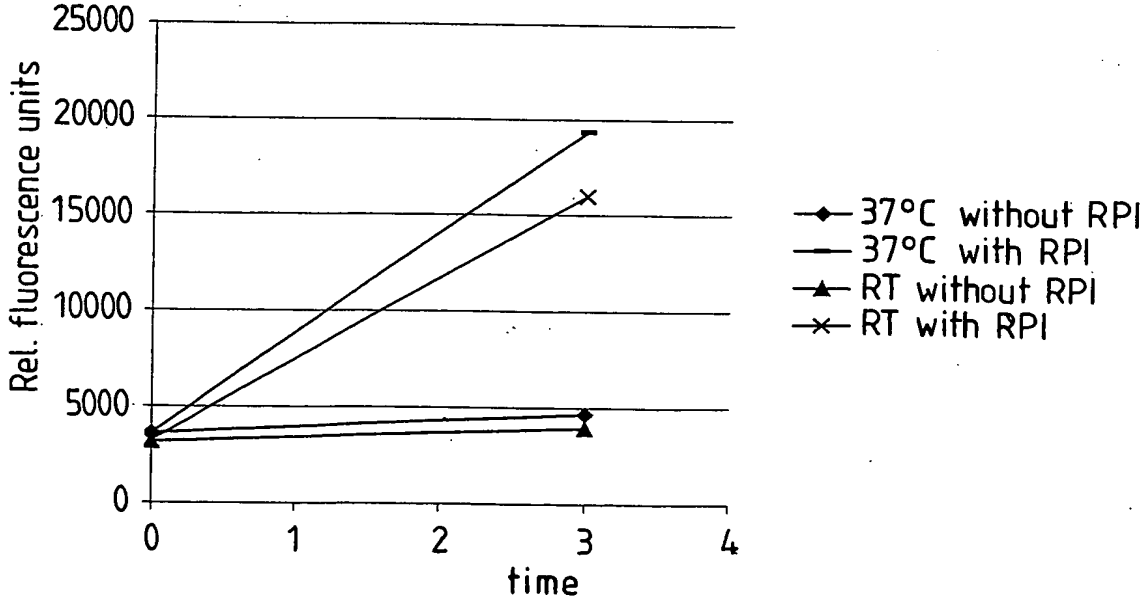
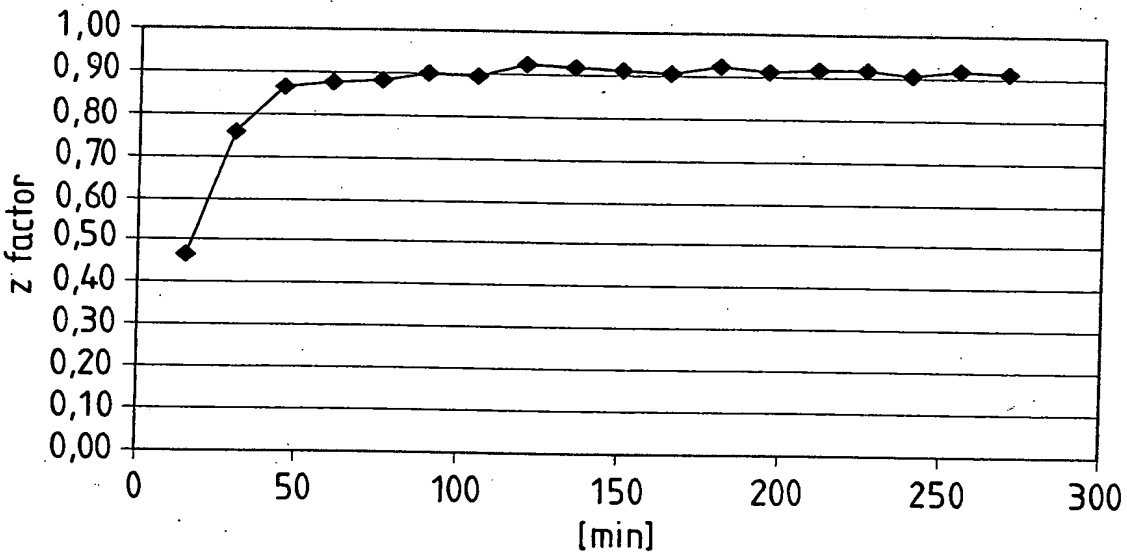


Fig. 8



CS-7861 | LeA 32,055
Peter Schreier et al

Fig. 9



CS 7861/LeA 36,055
Peter Schreier et al

Fig. 10A

```
U. maydis                .....MQSRL LSLVSSHLVS KRCFIARSAA LAPLLLHPQR
LRLTCPRSFS
S_pombe_144_12           ..... ..... ..... .....
.....
S_c_RKI1                 ..... ..... ..... .....
.....
mouse_rpi                ..... ..... ..... .....
.....
drosophila_RPI           MTYGHVACLL QVFVENEINL SPDQSCMNCC GGCHDTRSSG
CYKAEEEFCG
C_elegans_rpi            ..... ..... ..... .....
.....
a_thaliana_hyp.RPI       ..... ..... ..... .....
.....
E.coli_RPIA              ..... ..... ..... .....
.....

U. maydis                SQQSGPRKMA SSNATNSTSA ASAANTNSSA FKSAELAALS
GVEAAKRAAA
S_pombe_144_12           ..... ..... MDSAEKKLD. .....LS
PIELAKRLAC
S_c_RKI1                 ..... ..... MAAGVPKIDA LE....SLGN
PLEDAKRAAA
mouse_rpi                ..... ..... ..... .....MS
KAEEAKKLAS
drosophila_RPI           QQAACKGRLY KCNTIESENL LSGAAATLHT QIR..MMDDI
ALDAAKKTAA
C_elegans_rpi            ..... ..... .....MVTS TGP..EAELA
PIEQAKKRAA
a_thaliana_hyp.RPI       .....MAL AYDPLFITSD KSLSAFDVAS SPP..QPMNL
TQDELKRIAA
E.coli_RPIA              ..... ..... ..... .....M
TQDELKKAVG

U. maydis                YAAVDNHVK. PQHEILGIGS GSTVPYVVER IAQ..QGPAV
N...AKRWFV
```

CS-7861/LeA 36,055
Peter Schreier et al

Fig. 10B

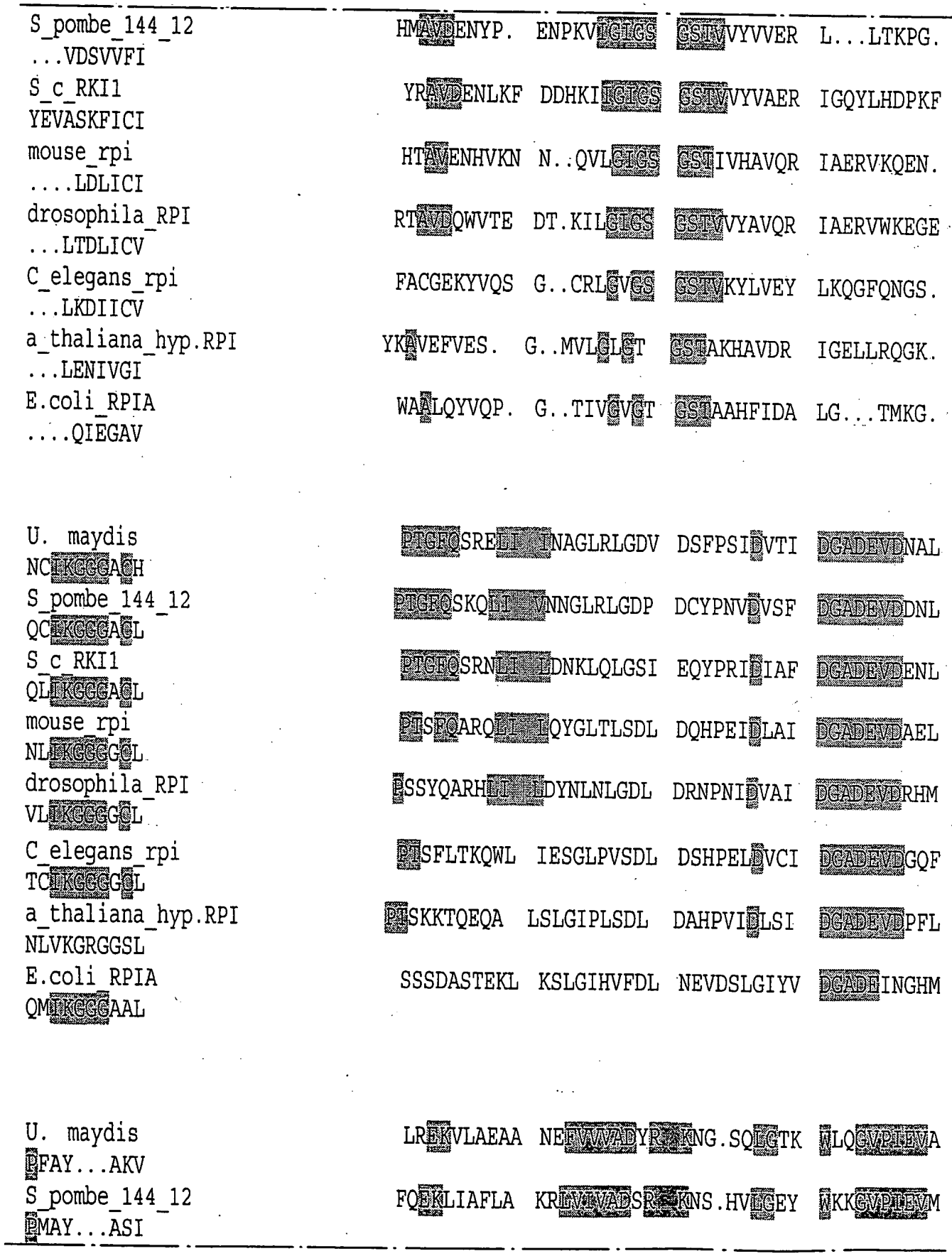


Fig. 10C

CS-7861/LeA 36,055
Peter Schreier et al

```
S_c_RKI1          FQEKLVSTSA  KTFLVVADSR  KKSPKHLGKN  WRQGVPLEIV
PSSY...VRV
mouse_rpi         TQEKIVAGYA  SRFLVIADFR  KDS.KNLGDR  WHKGIPLEVI
PMAY...VPV
drosophila_RPI    LQEKVVASCA  KHFIVVADYT  KNS.IRLGEQ  WCRGVPIEVA
PMAY...VPI
C_elegans_rpi     AQEKIVQTAA  KNFYVIADYL  KDS.KHLGDR  YPN.VPIEVL
PLAA...QPL
a_thaliana_hyp.RPI LREKMIEGAS KKFVVIVDDS  KMV.KHLGGS  KLA.LPVEIV
PFCWKFTAEK
E.coli_RPIA       TREKIIASVA  EKFICIADAS  KQV.DILG..  .KFPLPVEVI
PMAR...SAV

U. maydis         LQNLKK.MGS  DKAVLRMG.K  AKAGPVVTDN  GNFCIDAPFP
E.AQMKDPSD
S_pombe_144_12    LPQLVE.LGA  IEPKLRMGAP  GKAGPVVTDN  GNFIIDAHF.
..GLIKNPKE
S_c_RKI1          KNDLLEQLHA  EKVDIRQGGS  AKAGPVVTDN  NNFIIDADF.
..GEISDPRK
mouse_rpi         SRAVAQKFGG  E.VELRMA.V  NKAGPVVTDN  GNFIIDWKF.
..DRVHKWSE
drosophila_RPI    KLHIEALFGG  E.ASLRMA.K  VKAGPIVTDN  GNFLLDWKFI
A.NREYDWDE
C_elegans_rpi     LRSIPRAEGG  S.CQLRQA.V  KKCGPIVTDN  GNFIIDWQFE
KNVSGRDWFA
a_thaliana_hyp.RPI LRSLLEGYGC E.ANLRLG..  EKGKAFVTDN  GNYIVDMHVE
..EDMGDLGA
E.coli_RPIA       ARQLVK.LGG  R.PEYRQG..  .....VVTDN  GNVILDVHG.
..MEILDPIA

U. maydis         LLKRIKLLTG  VLEVGLFCN.  ICKSAYFGND  DGTITIKTAA
G........D
S_pombe_144_12    LFAKIKLLVG  VVEVGLFCD.  MISAVYFGSK  DGSVTVKKAS
GEKHIIPAPV
S_c_RKI1          LHREIKLLVG  VVETGLFID.  NASKAYFGNS  DGSVEVTEK.
..........
```

CS-7801/LeA 36,055
Peter Schreier

Fig. 10D

```
mouse_rpi                VNTAIKMTPG VVDTGLTIN. MAERVYFGMQ DGSVNVREKP
F.........
drosophila_RPI           VNRAITLIPG VIETGLTVN. MAHKCYYGMA NGSVKVQNK.
..........
C_elegans_rpi            IQQRLANTPG LVETGLTIG. CVDAVFFAYS DGSVKEIVNS
KKH.......
a_thaliana_hyp.RPI       VSDAILRLPG VVEHGMTLD. MASTVIIAGE LG.VKIKNKH
..........
E.coli_RPIA              MENAINAIPG VVTVGLTANR GADVALIGTP DG.VKTIVK.
..........

U. maydis                VQEGVHFDVS KAPATA....
S_pombe_144_12           TAAANEVDAK VAETNAKPLN
S_c_RKI1                 .......... ..........
mouse_rpi                .......... ..........
drosophila_RPI           .......... ..........
C_elegans_rpi            .......... ..........
a_thaliana_hyp.RPI       .......... ..........
E.coli_RPIA              .......... ..........
```

Fig. 11A

CS-7861 | LeA 36,055
Peter Schreier et al

```
U_m_RPI1                MQSRLLSLVS SHLVSKRCFI ARSAALAPLL LHPQRLRLTC
PRSFSSQQSG
SPAC144_12              ..........  ..........  ..........  ..........
..........
SC_RKI1                 ..........  ..........  ..........  ..........
..........
CRYNE_001022            ..........  ..........  ..........  ..........
..........
CANAL_Contig6-2195      ..........  ..........  ..........  ..........
..........
embl.CNS06G7H           ..........  ..........  ..........  ..........
..........
NEUCR_contig            ..........  ..........  ..........  ..........
..........
embl.CNS06MQK           ..........  ..........  ..........  ..........
..........
embl.CNS06EST           ..........  ..........  ..........  ..........
..........
embl.CNS0766C           ..........  ..........  ..........  ..........
..........
embl.CNS06ZNB           ..........  ..........  ..........  ..........
..........
embl.CNS06ZLP           ..........  ..........  ..........  ..........
..........
embl.KLAJ9603           ..........  ..........  ..........  ..........
..........


U_m_RPI1                PRKMASSNAT NSTSAASAAN TNSSAFKSAE LAALSGVEAA
KRAAAYAAVD
SPAC144_12              ..........  ..........  ....MDSAEK KLDLSPIELA
KRLACHMAVD
SC_RKI1                 ..........  .........M AAGVPKIDAL ESLGNPLEDA
KRAAAYRAVD
CRYNE_001022            ..........  ..........  ..........  ..........
..........
CANAL_Contig6-2195      ..........  ..........  ..........  MSSTSKVESA
KKLAAYKAVD
embl.CNS06G7H           ..........  ..........  ..........  ..........
```

Fig. 11B

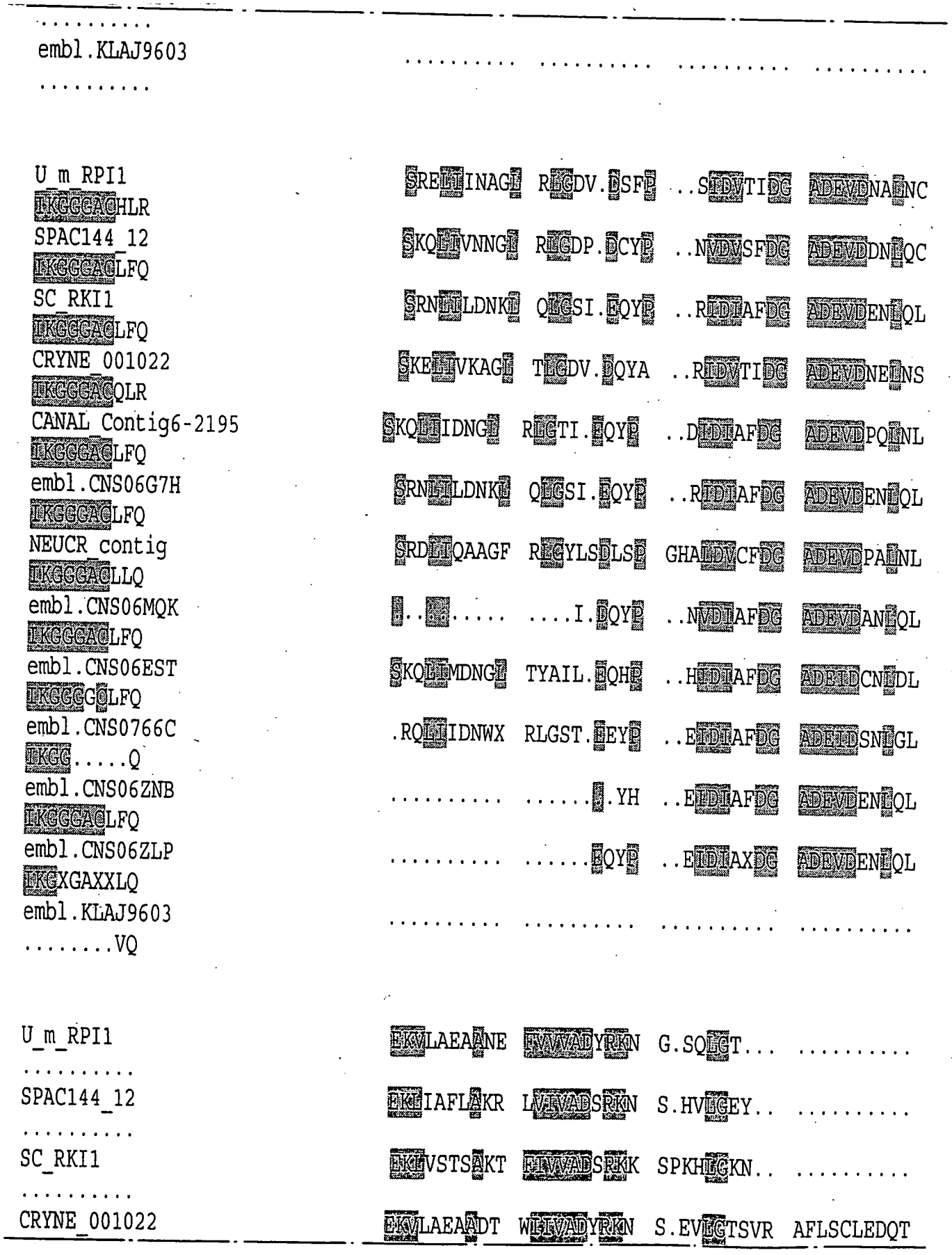
CS-7861/LeA 36,055
Peter Schreier et al

```
.....
NEUCR_contig                .....  .....  .....  .AAQQLIEKS
KFLAANRAVT
embl.CNS06MQK               .....  .....  .....  .....
.....
embl.CNS06EST               .....  .....  .....  .....
.....
embl.CNS0766C               .....  .....  .....  .....
.....
embl.CNS06ZNB               .....  .....  .....  .....
.....
embl.CNS06ZLP               .....  .....  .....  .....
.....
embl.KLAJ9603               .....  .....  .....  .....
.....

U_m_RPI1                    NHVK.PQHEI IGIGSGSTVP YVVERIAQQG .....PAVNA
KRWFVPTGFQ
SPAC144_12                  ENYP.ENPKV IGIGSGSTVV YVVERLLT.. .....KPGVD
SVVFLPTGFQ
SC_RKI1                     ENLKFDDHKI IGIGSGSTVV YVAERIGQYL HDPKFYEVAS
KFICIPIGFQ
CRYNE_001022                ......QQQV IGIGSGSTVP YVVDRILAQG .....FEANK
DRVFLPTGFQ
CANAL_Contig6-2195          ENFP.KDAKV IGIGSGSTVI YAAERIGQ.. .....LDNKD
SFICIPTGFQ
embl.CNS06G7H               ......EHKI VGIGSGSTVV YVAERIGQYL QDSQYSDLVS
KFVCIPTGFQ
NEUCR_contig                EHLS.PTYRH IGIGSGSTVI HVVDVISKLG .....TTITG
PMTFYPTGDQ
embl.CNS06MQK               .....  .....  .....  .....
.....
embl.CNS06EST               ......QHRV IGIGSGSTVI YVAERIGQYL RDDEYRDYVS
KFKCVATGYQ
embl.CNS0766C               .....  .....  .....  .....
.....
embl.CNS06ZNB               .....  .....  .....  .....
.....
embl.CNS06ZLP               .....  .....  .....  .....
```

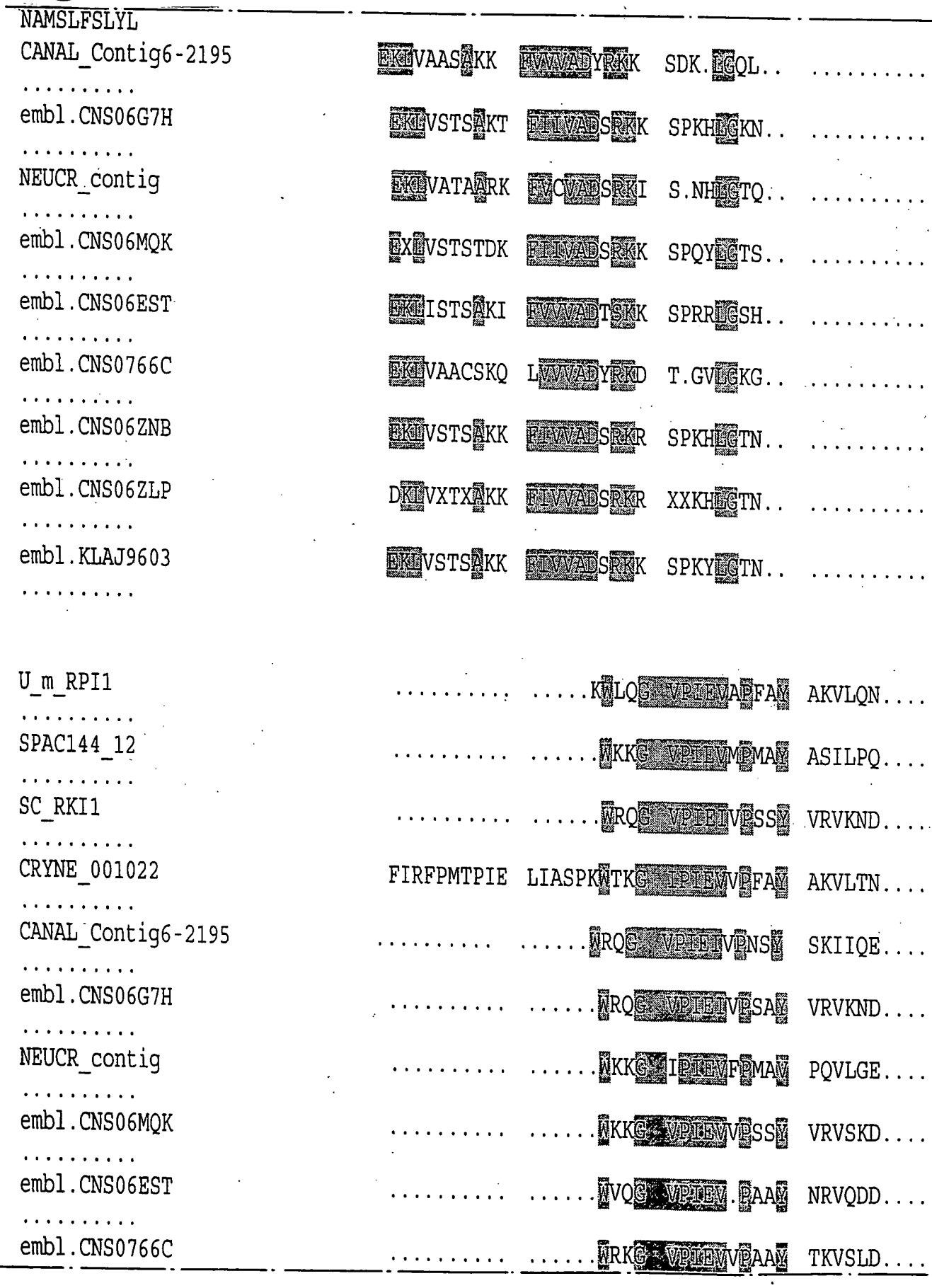
CS-7861 | LeA 36,055
Peter Schreier et al

Fig. 11C



CS-7841/LeA 36,055
Peter Schreier et al

Fig. 11D



CS-7861/LeA 36,055
Peter Schreier et al

Fig. 11E

```
.....
embl.CNS06ZNB ..... .....WKRG VPLEVVPSSY VHVLTA....
.....
embl.CNS06ZLP ..... .....WKRG VPLEVLPSSY DRAVAR....
KRGPWLRITA
embl.KLAJ9603 ..... .....WKKG VPIEVVPSSY VRVLSD....
.....

U_m_RPI1 ..... ..... ..... .....
.....
SPAC144_12 ..... ..... ..... .....
.....
SC_RKI1 ..... ..... ..... .....
.....
CRYNE_001022 ..... ..... ..... .....
.....
CANAL_Contig6-2195 ..... ..... ..... .....
.....
embl.CNS06G7H ..... ..... ..... .....
.....
NEUCR_contig ..... ..... ..... .....
.....
embl.CNS06MQK ..... ..... ..... .....
.....
embl.CNS06EST ..... ..... ..... .....
.....
embl.CNS0766C ..... ..... ..... .....
.....
embl.CNS06ZNB ..... ..... ..... .....
.....
embl.CNS06ZLP TSSLTLTFGE ..IADPRKLH QDIKMLVGVV ETGLFIDNAE
KAYFGSPDGS
embl.KLAJ9603 ..... ..... ..... .....
.....

U_m_RPI1 ..... .....L KKMGS..... ...DKAVLRM
GKAKAG..PV
SPAC144_12 ..... .....L VELGAI.... ...EPKLRMG
```

CS-7861/LeA 34,055
Peter Schreier et al

Fig. 11F

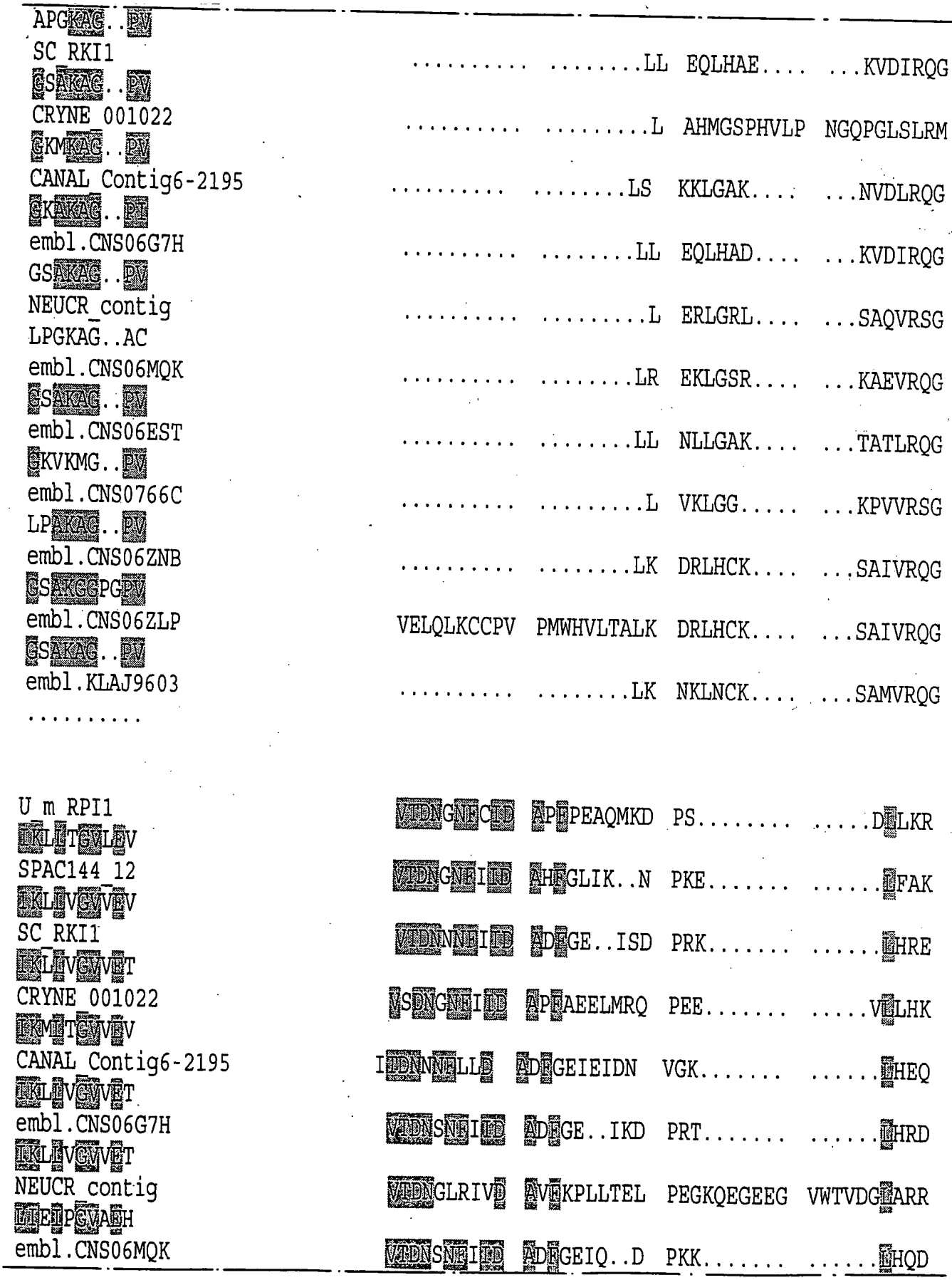


Fig. 11G

CS-7861/LeA 36,055
Peter Schreier et al

```
LKMLVGVVET
embl.CNS06EST     VLDNNNTILD THFGD..IDD PKK.....  .....LHDN
LKALVGVVET
embl.CNS0766C     VLDNGNEILD CDLGEIPPAQ VAE.....  .....LNAK
LKALVGVVET
embl.CNS06ZNB     VTDNCNFILD ADFGE..IAD XRK.....  .....LHQD
LKMLVGVVET
embl.CNS06ZLP     VTDNCNFILD ADF.....  .........  .........
.........
embl.KLAJ9603     .........  .........  .........  .........
.........

U_m_RPI1          GLFCNI....  ........CK SAYFGNDDGT ITIKTAAGDV
QEGVHFDVSK
SPAC144_12        GLFCDM....  ........IS AVYFGSKDGS VTVKKASGEK
HIIPAPVTAA
SC_RKI1           GLFIDN....  ........AS KAYFGNSDGS VEVTEK....
.........
CRYNE_001022      GLFCGM....  ........AK AAYFCNE...  .........
.........
CANAL_Contig6-2195 GLFTNM....  ........AN KAYFGEEDGS VSV.......
.........
embl.CNS06G7H     GLFIDN....  ........AS KAYFGNSDGT .........
.........
NEUCR_contig      GLFYGKSGLE VESGGAQKPV AAYFGMEDGS VMVQT.....
.........
embl.CNS06MQK     GLFIDN....  ........AC KAYFGNADGT VEV.......
.........
embl.CNS06EST     GLFIGN....  ........AA KAYLGSPDGD VLI.......
.........
embl.CNS0766C     GLFVSL....  ........AS KAYIGNADGT ITKKT.....
.........
embl.CNS06ZNB     GLFIDN....  ........AE KAYFGSPDGS VELQ......
.........
embl.CNS06ZLP     .........  .........  .........  .........
.........
embl.KLAJ9603     .........  .........  .........  .........
.........
```

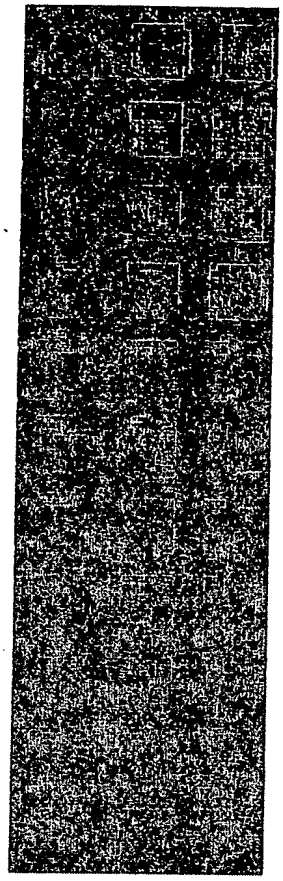
CS7861/LeA 36,055
Peter Schreier et al

Fig. 11H

```
U_m_RPI1                APATA..... .......
SPAC144_12              ANEVDAKVAE TNAKPLN
SC_RKI1                 ..........  .......
CRYNE_001022            ..........  .......
CANAL_Contig6-2195      ..........  .......
embl.CNS06G7H           ..........  .......
NEUCR_contig            ..........  .......
embl.CNS06MQK           ..........  .......
embl.CNS06EST           ..........  .......
embl.CNS0766C           ..........  .......
embl.CNS06ZNB           ..........  .......
embl.CNS06ZLP           ..........  .......
embl.KLAJ9603           ..........  .......
```

CS-7861/LeA 36,055
Peter Schreier et al

Fig. 12



← 20 mM Ribose-5-phosphate

Fig. 13

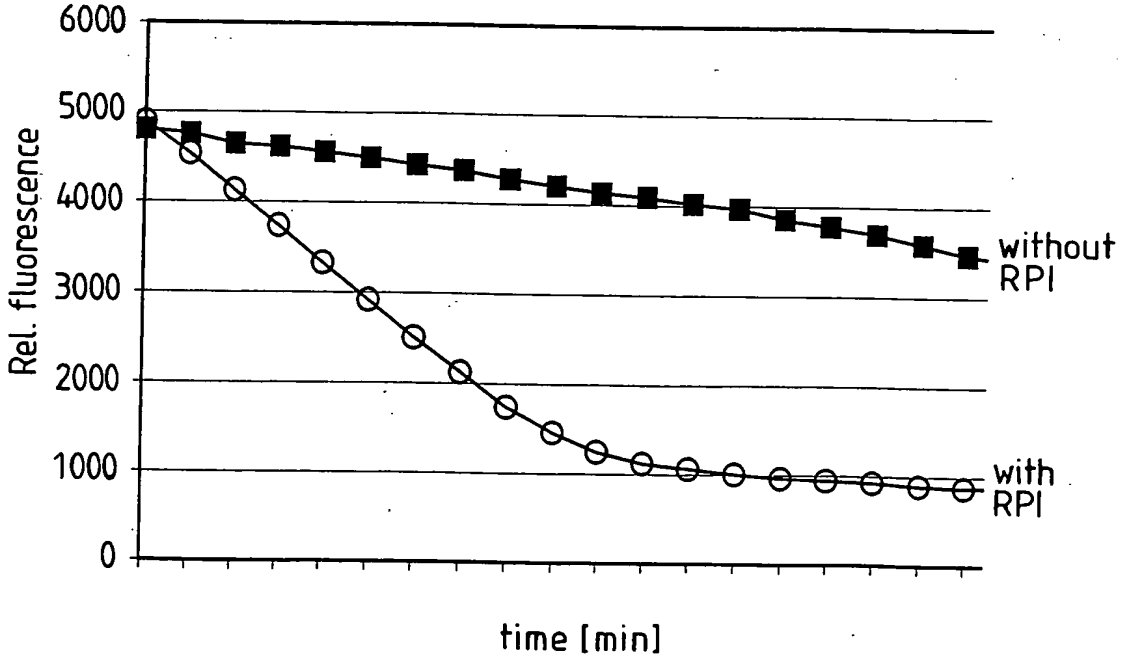


Fig. 14